

**In the Drawing**

Substitute the enclosed new drawing for the original drawing.

**REMARKS**

Reconsideration and allowance are requested.

In accordance with 37 C.F.R. 1.121, attached to this Amendment are marked up versions of Claims 1-2 and 10-11 to show the changes made in these claims.

**I. The Objection to the Drawing**

Attached to the Office Action is a Notice of Draftsperson's Patent Drawing Review which notes several objections to the original drawing.

In response, applicant is submitting a new drawing with this Amendment.

**II. The Objections to the Claims**

(A) The Examiner has objected to the use of the capital letters A, B and C in Claim 1.

In response, while applicant does not understand the basis for this objection, these letters have been changed to the lower case letters a, b and c.

(B) In addition, the Examiner has objected to the use of the capital letters D, E, F and G in Claim 2.

In response, while applicant does not understand the basis for this objection, these letters have been changed to the lower case letters d, e, f and g.

(C) The Examiner has inquired as to the meaning of the designations (g), (d) and (a) in Claim 10.

In response, applicant states that these designations refer to the obtuse angles shown in the drawing for this application.

(D) In regard to Claim 10, the Examiner has stated that the capital letter X should be changed to the lower case letter x.

In response, this change has been made.

### **III. The Objection to the Information Disclosure Statement**

The Examiner has stated that the IDS filed December 27, 2001 fails to comply with the provisions of 37 C.F. R. 1.97-1.98 and MPEP § 609 because that IDS does not belong to this application.

In response, the Examiner is informed that an IDS was not filed in this application on December 27, 2001. With regard to this application, applicant filed an IDS on May 13, 2002 and a Supplemental IDS on July 16, 2002, both of which are shown as part of this Office Action.

The Examiner will note that the December 27 IDS refers to Nakamura et al. U.S. Patent 6,025,169, which is entitled "Process for Production of Lysine by Fermentation", clearly not related to the present application. Apparently, the December 27 IDS has been mis-filed in this application due to an incorrect serial number used by the submitter of that IDS.

#### IV. The Rejection Under Section 102

Under 35 U.S.C. § 102(b), the Examiner has rejected Claims 1, 3 and 12 as being anticipated by FitzGerald U.S. Patent 5,382,958. This rejection is traversed for the following reasons.

The language of 35 U.S.C. §102(b) states that:

A person shall be entitled to a patent unless ---

- (b) the invention was patented or described in a printed publication in this or a foreign country. . . more than one year prior to the date of the application. . . .

The interpretation of 102(b) is, without question, that **the denial of a patent requires that the reference teach applicant's invention as defined by the claims.** This requirement is also referred to as "anticipation," and the Courts have provided clear and unambiguous definitions in this area.

In *General Electric Company v. United States*, 572 F.2d 745, 768, 198 U.S.P.Q. 65, 85 (U.S. Court of Claims 1978), a case involving Section 102(e), the Court stated:

**To anticipate a claim a prior art reference must show each and every element claimed.** Short of this, anticipation does not exist. *In re Royka*, 490 F.2d 981, 984, 180 U.S.P.Q. 580, 583 (Cust. & Pat. App. 1974).

(Emphasis added.)

Another case involving Section 102 is *Akzo N.V. et al. v. U.S. International Trade Commission*, 808 F.2d 1471, 1 U.S.P.Q.2d 1241 (CAFC 1986).

The Court stated at page 1245:

Under 35 U.S.C. § 102, **anticipating requires that each and every element of the claimed invention be disclosed in a prior art reference.** *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851, 105 S.Ct. 172, 83 L. Ed. 2d 107 (1984). In addition, the prior art reference must be enabling, thus placing the allegedly disclosed matter in the possession of the public. *In re Brown*, 329 F.2d 1006, 1011, 141 U.S.P.Q. 245, 249 (CCPA 1964).

(Emphasis added.)

In *Rolls-Royce Limited et al. v. GTE Valeran Corporation*, 625 F. Supp. 343 (E.D. Michigan 1985), *affirmed*, 800 F.2d 1101, the District Court stated at page 352 with regard to the validity of a patent:

Anticipation under 35 U.S.C. § 102 **requires the disclosure in a single prior art reference of each element of the claim** under consideration. *Multifastener Corp. v. MacLean-Fogg Co.*, 572 F. Supp. 418 (E.D. Mich. 1983).

(Emphasis added.)

Similarly, in *Titanium Metals Corp. v. Mossinghoff*, 603 F. Supp. 87 (D.C. 1984), the District Court clearly stated on page 89:

Turning first to the issue raised under Section 102, the Court notes that the section has been interpreted as precluding the grant of a patent only when the claimed invention is described in a printed publication in such a manner that **the disclosure in the publication is specific to every critical element of the application claims** and when the disclosure in the publication is sufficiently enabling to place the subject matter claimed in the application in the public knowledge.

(Emphasis added.)

The very specific requirements of Section 102 were also discussed in *Rohm and Haas Company v. Mobil Oil Corporation*, 718 F.Supp. 274 (D. Del. 1989). At page 299, the District Court stated:

"anticipation" requires that **each and every limitation** of Claim 1 be disclosed in the reference relied on . . .

(Emphasis added and citations omitted.)

Applicant believes that further citations are not necessary with regard to the requirements of a proper rejection under Section 102(b).

While the FitzGerald patent may disclose a "position location arrangement for self location of an object", this patent does not teach applicant's invention as defined by the claims of the present application.

On page 2-3, the Examiner states the support for this rejection. While applicant may agree with the Examiner's statements in regard to the FitzGerald disclosures, this patent does not anticipate the requirements of applicant's claims.

More specifically, **the FitzGerald patent teaches a synchronized process, which is neither identical to nor the equivalent of applicant's non-synchronized process.**

At the following locations, the FitzGerald patent teaches:

Column 1, lines 10-15:

The present invention pertains to simulated battlefield position location and more particularly to a **synchronized multi-lateration position location arrangement** for determining the affects of simulated munitions deployment upon a target.

(Emphasis added.)

Column 1, lines 58-60:

In accordance with the present invention, a **novel synchronized time transfer position detection arrangement** is shown.

(Emphasis added.)

Column 2, lines 5-11:

Each of the relays **synchronizes to a GPS satellite clock**. Each relay then transmits a time pulse which is the position location information along with the relay's identification in a particular time slot of an information frame. Each relay then repeats **the synchronizing and transmission** of the position information at a particular frequency.

(Emphasis added.)

At lines 46-51 of column 2:

Each relay 12-16 includes a processor, receiver and transmitter and a GPS receiver (GPS). Each of the

relays 12-16 **synchronizes its transmission** with a fixed time delay with respect to GPS determined time. **Therefore, each of the relays 12-16 are synchronized with one another.**

(Emphasis added.)

Finally, at column 4, lines 52-54:

The **synchronized multi-lateration location method** is depicted in FIG. 4.

(Emphasis added.)

These disclosures clearly establish that the process taught by the FitzGerald patent is based on the essential element of synchronization. To the contrary, as can be determined from the present claims, applicant's process is based on the essential element of non-synchronization.

In summary, the FitzGerald patent fails to teach an essential feature of applicant's invention as defined by the claims of the present application. Consequently, this rejection under Section 102(b) should be withdrawn.

## **V. The Rejections Under Section 103**

In six (6) separate rejections, the Examiner has used 35 U.S.C. § 103(a) as the basis for rejecting Claims 2, 4-9 and 13-15. These rejections are traversed based upon the following reasons.

Section 103(a) requires that, if a patent is denied to an applicant, the differences between the subject matter sought to be patented and the prior art must be such that the subject matter as a whole would have been obvious at the time the invention was made to a person having

ordinary skill in the art to which the subject matter pertains. Section 103(a) further provides that patentability shall not be negative by the manner in which the invention was made.

With regard to the requirements for a proper obviousness rejection under Section 103, applicant refers to the following decisions.

The Court of Appeals for the Federal Circuit stated as follows in *In re Wright*, 6 U.S.P.Q.2d 1959, 1961 (CAFC 1988):

We repeat the mandate of 35 U.S.C. § 103: it is the invention as a whole that must be considered in obviousness determinations. **The invention as a whole embraces the structure, its properties, and the problem it solves.**

. . . The determination of whether a novel structure is or is not "obvious" **requires cognizance of the properties of that structure and the problem which it solves**, viewed in light of the teachings of the prior art.

. . . (the particular problem facing the inventor **must be considered** in determining obviousness). . .

. . . (it is error to focus "solely on the product created, rather than on the obviousness or nonobviousness of its creation"). . .

(Emphasis added and citations omitted.)

In dealing with the concept of obviousness, the CAFC in the *Wright* case clearly states on pages 1961-2:

Thus the question is whether what the inventor did would have been obvious to one of ordinary skill in the art **attempting to solve the problem upon which the inventor was working.**



The problem solved by the invention is always relevant. The entirety of a claimed invention, including the combination viewed as a whole, the elements thereof, and the properties and purpose of the invention, must be considered.

In either case, the requisite view of the whole invention mandates consideration of not only its structure but also its properties and **the problem solved.**

(Emphasis added and citations omitted.)

Applicant maintains that, without knowledge or recognition of his problem, the references cited by the Examiner cannot properly be asserted under the concept of obviousness. There must be at least a suggestion of applicant's problem in order for one having ordinary skill in this art to use the cited references as a basis or starting point toward a solution to such problem.

This theory is not new, as shown by the Court of Customs and Patent Appeals in *In re Shaffer*, 108 U.S.P.Q.326, 329 (CCPA 1956):

In fact, a person having the references before him **who was not cognizant** of appellant's disclosure would not be informed that the problem solved by appellant ever existed. **Therefore, can it be said that these references which never recognized appellant's problem would have suggested its solution. We think not,** and therefore feel that the references were improperly combined since there is no suggestion in either of the references that they can be combined to produce appellant's result.

(Emphasis added.)

In support of his position of nonobviousness, applicant also refers to *In re Hortman*, 121 U.S.P.Q. 218 (CCPA 1959) wherein the Court stated on page 219:

For, though the structure may be but a simple expedient when the novel concept is realized, that structure may not be obvious to the skilled worker in the art where the **prior art has failed to suggest the problem or conceive of the idea for its elimination.**

(Emphasis added.)

As shown below, the clear facts are that (1) the prior art does not suggest applicant's problem and, therefore, (2) the prior art does not suggest applicant's solution to such problem.

The specific rejections under Section 103(a) are as follows:

<b>Claims</b>	<b>References</b>
2	FitzGerald patent in view of Sanderford et al. U.S. Patent 5,717,406
4	FitzGerald patent in view of Morton U.S. Patent 6,318,667
5	FitzGerald patent in view of Cargill U.S. Patent 5,432,546
6-8	FitzGerald patent in view of Dupray U.S. Patent 6,249,252
9	FitzGerald patent in view of Ishikawa U.S. Patent 6,329,948
13-15	FitzGerald patent in view of Marsh U.S. Patent 6,057,759

The Examiner's support for these rejections is shown on pages 3-8 of the Office Action. Applicant will respond to these six (6) rejections in a unified way.

The discussions provided above in regard to the FitzGerald patent are applicable to these rejections, and those discussions should be considered as repeated here.

As discussed above in detail, the FitzGerald patent teaches the use of a synchronized process. There is simply no teaching or disclosure in the FitzGerald patent that would either lead or suggest to one that a non-synchronized process could be used as part of that invention. Without question, this patent fails to teach or render obvious an essential element of the present invention --- the use of a non-synchronized process. As a result, there is no reasonable basis to conclude that one having ordinary skill in this art would combine the disclosure of the FitzGerald patent with the disclosures of the Sanderford et al., Morton, Cargill, Dupray, Ishikawa or Marsh patents. Even assuming such combinations, the non-synchronized process of applicant's invention would not be rendered obvious by such combinations.

In addition, applicant submits that the Examiner has not provided a proper basis upon which these patents would be combined by a person having ordinary skill in this art. With regard to the lack of a proper basis, applicant refers to *In re Geiger*, 2 USPQ2d 1276 (CAFC 1987), wherein the Court states at page 1278:

We agree with appellant that the PTO has failed to establish a prima facie case of obviousness. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, **absent some teaching suggestion or incentive supporting the combination.**

(Emphasis added.)

In summary, the above discussion clearly supports the conclusion that applicant's invention, **as defined by the claims of this application**, is patentable over the combination of the FitzGerald patent with the Sanderford et al., Morton, Cargill, Dupray, Ishikawa or Marsh

patents as cited by the Examiner. Accordingly, these rejections under Section 103(a) should be removed.

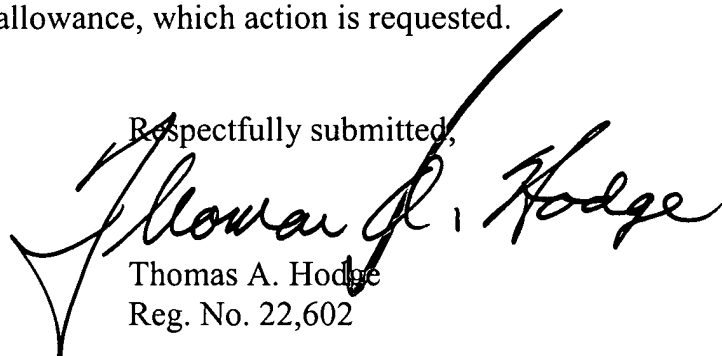
## **VI. The Allowable Subject Matter**

The Examiner has objected to Claims 10-11 as being dependant upon a rejected base claim, but stated that Claims 10-11 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In response, Claims 10-11 are now presented in such independent form.

Based upon the above amendments, reasoning and the new drawing, applicant submits that this application is in condition for allowance, which action is requested.

Respectfully submitted,

A handwritten signature in black ink, reading "Thomas A. Hodge". The signature is written in a cursive style with a large, sweeping initial "T".

Thomas A. Hodge  
Reg. No. 22,602

BAKER, DONELSON, BEARMAN & CALDWELL  
Suite 900  
Five Concourse Parkway  
Atlanta, GA 30328  
(678)406-8700  
Docket No. 170943-00001

**MARKED-UP VERSION TO SHOW CHANGE(S) MADE**

**Amended Claim 1:**

1. (Amended) A process for determining an impact location of a transmitter-bearing object within a geographical area containing a target, wherein the process comprises the steps of:

[A.]a. providing an object with a transmitter which upon activation transmits a unique signal, wherein the transmitter includes a non-synchronized time/frame counter to indicate a length of time during which the signal is transmitted;

[B.]b. providing at least three stations for receiving data contained in the signal transmitted from the object and then transferring the data to a central processing station; and

[C.]c. providing means at the central processing station to use the data in performing calculations to determine the impact location of the object.

**MARKED-UP VERSION TO SHOW CHANGE(S) MADE**

**Amended Claim 2:**

2. (Amended) A process as defined by Claim 1, wherein the process comprises the additional steps of:

[D.]d. placing the receiving stations in a triangular configuration having an area which creates a spatial plane that geographically includes the target;

[E.]e. determining the linear distances between the receiving stations and the central processing station;

[F.]f. defining the spatial plane by a coordinate system to perform the calculations at the central processing station, whereby the spatial plane is correlated to the geographical plane of the target range by an algorithm; and

[G.]g. determining correction factors which are used to adjust for signal delays in transferring data from the receiving stations to the central processing station, whereby the correction factors are based upon the differences in linear distances between the receiving stations and the central processing station.

# MARKED-UP VERSION TO SHOW CHANGE(S) MADE

## Amended Claim 10:

10. (Amended) A process for determining an impact location of a transmitter-bearing object within a geographical area containing a target, wherein the process comprises the steps of:

a. providing an object with a transmitter which upon activation transmits a unique signal, wherein the transmitter includes a non-synchronized time/frame counter to indicate a length of time during which the signal is transmitted;

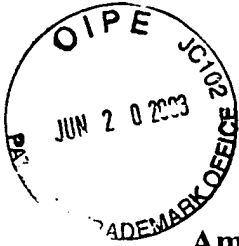
b. providing at least three stations for receiving data contained in the signal transmitted from the object and then transferring the data to a central processing station; and

c. providing means at the central processing station to use the data in performing calculations to determine the impact location of the object[.], wherein the calculations performed at the central processing station are performed using the following mathematical formula:

$$\begin{array}{ccc} \text{(g)} & \text{(d)} & \text{(a)} \\ \cos^{-1}\left(\frac{(x+t_2)^2 + (x+t_1)^2 - D_3^2}{2 \times (x+t_2) \times (x+t_1)}\right) + \cos^{-1}\left(\frac{x^2 + (x+t_2)^2 - D_2^2}{2 \times (x+t_2) \times x}\right) + \cos^{-1}\left(\frac{(x+t_1)^2 + x^2 - D_1^2}{2 \times (x+t_1) \times x}\right) = 360 \end{array}$$

wherein  $x$  is the unknown amount of time required for the signal upon impact of the transmitter-bearing object to reach the closest receiving station, the receipt of the signal serving to activate the counters at each receiving station;  $t_1$  is the amount of time in addition to  $x$  required for the signal upon impact of the transmitter-bearing object to reach the next closest receiving station;  $t_2$  is the amount of time in addition to  $x$  required for the signal upon impact of the transmitter-bearing object to reach the farthest receiving station;  $D_1$  is the distance between the first and second receiving stations;  $D_2$  is the distance between the first and third receiving stations; and  $D_3$  is the distance between the second and third receiving stations.





## MARKED-UP VERSION TO SHOW CHANGE(S) MADE

## Amended Claim 11:

11. (Amended) A process for determining an impact location of a transmitter-bearing object within a geographical area containing a target, wherein the process comprises the steps of:

a. providing an object with a transmitter which upon activation transmits a unique signal, wherein the transmitter includes a non-synchronized time/frame counter to indicate a length of time during which the signal is transmitted;

b. providing at least three stations for receiving data contained in the signal transmitted from the object and then transferring the data to a central processing station; and

c. providing means at the central processing station to use the data in performing calculations to determine the impact location of the object[.], wherein the calculations performed at the central processing station are performed using the following mathematical formula:

$$\begin{array}{ccc} \text{(g)} & \text{(d)} & \text{(a)} \\ \cos^{-1}\left(\frac{(x+t_2)^2 + (x+t_1)^2 - D_3^2}{2 \times (x+t_2) \times (x+t_1)}\right) + \cos^{-1}\left(\frac{x^2 + (x+t_2)^2 - D_2^2}{2 \times (x+t_2) \times x}\right) + \cos^{-1}\left(\frac{(x+t_1)^2 + x^2 - D_1^2}{2 \times (x+t_1) \times x}\right) = 360 \end{array}$$

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wherein  $x$  is the unknown amount of time required for the signal upon impact of the transmitter-bearing object to reach the closest receiving station, the receipt of the signal serving to activate the counters at each receiving station;  $t_1$  is the amount of time in addition to  $x$  required for the signal upon impact of the transmitter-bearing object to reach the next closest receiving station;  $t_2$  is the amount of time in addition to  $x$  required for the signal upon impact of the transmitter-bearing object to reach the farthest receiving station;  $D_1$  is the distance between the first and second receiving stations;  $D_2$  is the distance between the first and third receiving stations[.]; and  $D_3$  is the distance between the second and third receiving stations; and wherein  $D_1$ ,  $D_2$  and  $D_3$  are constant values.